

G. M. (Dunedin): Can a 20 ohm rheostat be used instead of the amperite in "R. the W. Two"?—Yes.

2. Can one of the windings of the earphones be used as an r.f.c.?—No.

3. Can you send me a diagram of how to make valve base coils for the Cossor Melody Maker?

A.: The making of valve base coils has been described in the 1930 "Guide." You will have to reduce the capacity of your condenser by a suitable tuning condenser and following specifications given for a .00015. Probably you will need a .0002 fixed condenser.

A. E.S. (Timaru): Where does the extra terminal go when connecting a pentode to a set?

A.: To the highest B plus tapping on your battery.

Note.—Thank you for your offer. It should prove very interesting.

L. E. (Taupiri): I made the short-wave adapter described in the 1930 "Guide." With several adaptations, I can receive Morse and static but no broadcast.

A.: Apparently you are not used to short-wave tuning, as when you are receiving morse you are oscillating, and to receive broadcast you must be on the verge of oscillation. You should have followed the description in the "Guide" as you may now be getting a certain amount of hum. We know of no better a.c. circuit. You should have used a coupon.

JACKO (Auckland): I want to replace the valves in my four valve B.D. What do you advise me to use?

A.: You can still keep using the A609 in the radio stages. For the detector try 615 Philips, or PM6D Mullard. For first audio any of the following: A609, PM5X, 221A, L610. For the last stage: B605, PM256, UX112, P610.

A. C.B. (Rotherham): Volume has become considerably reduced and I have checked over all the connections. Everything seems O.K.

A.: We regret we cannot help you as you have given us no clue to work on. Contact the dealer who sold you the set.

H. H. (Christchurch): Can A and B current be taken from a "B" eliminator?

A.: No, the winding on the secondary will not supply enough current.

C. D. (Auckland): My set will not oscillate when the aerial is connected to the centre tap of the coil and the earth is on, but when the earth is removed it will oscillate freely.

A.: This is due probably to damping effects of the aerial which are countered when the earth is removed.

2. Why does 12B come in stronger than 1YA?

A.: Probably your set amplifies frequency in the region of 12B greater than those near 1YA.

AIRLINE (Featherston): With the detector rheostat on about a quarter turn and the amplifier on full I can get only very weak strength. When I touch the first valve there is a whistle.

A.: This appears to be due to poor emission. The valves are paralysed and should be replaced.

COILFORMER (Hikurangi): Please design secondary and reactions coils to cover the waveband from 20 to 80 metres. Ribbed formers 2 1/2 in. outside diameter secondary wire 22 s.w.g. bare spaced an eighth of an inch, reaction wire 30 dsc. tuning condenser .0001 slow-motion reaction condenser .0002, valve A615.

Band.	Secondary.	Tickler.
16/27 metres	2 1/2	4
27/48	6	4 1/2
47/84	11	8

J. C. (N.E. Valley): One of your answers to my queries did not seem to agree with what I had worked out myself. This is in relation to the number of turns on the primary of an r.f. transformer. I worked out to be about 14 and you say 11. Which is correct?

A.: Both; the impedance of the valves varies according to the frequency it is receiving, so that anywhere between 11 and 15 turns would be correct.

2. I have a 201A in the last stage of my 6-valve set. The signals do not seem to be as loud as they should do.

A.: The 201A should not be in the last stage. Put in a power valve. In respect to the first audio valve see that the primaries are not reversed in relation to the secondary winding.

ANGUS (Wanganui): I am troubled with coupling between the r.f. and detector coils of my 4-valve screen-grid set.

A.: Try a 1mfd. by-pass condenser across the radio and detector battery lead. Do not use a common lead in the "B" battery leads to the s.g. and any other valves. Use separate leads and wiring, otherwise place large radio frequency chokes in leads. This is a common complaint in your type of set. Reduce the grid leak value and look very carefully over your audio side where oscillation is really taking place.

2. Are the signal strengths referred to by Sellens of 'phone or speaker?

A.: Both. If you consult the table which was published a short time back you will notice that some of the higher numbers refer to speaker strength. Others are 'phones.

3. How is the centre tap of the variometer volume control in a 5-valve Stewart Warner neodyne connected to the rest of the set?

A.: The two grid returns of the r.f. valves are brought to the centre tap and the outside terminals go to the "A" battery.

C. V.N.B. (Feilding): I find the voltage supplied by my home-made charger is correct, but the charging rate is too high. When I bring the voltage down the amperage immediately jumps up.

A.: This is quite correct; the higher the voltage used in charging the lower the amperage and conversely the lower the voltage the higher the amperage when using apparatus of this description. You need a power clorostat (Radio, Ltd., Auckland) or a power rheostat (National Electric Engineering, Wellington). You

Coastal Radio Stations

A Comprehensive Network

ADVANCES in radio are being made so rapidly nowadays that many of the everyday services are often overlooked. One of the most interesting wireless organisations in the Southern Hemisphere is the Pacific coastal radio service, which comprises over thirty stations, scattered throughout Australia and the Pacific islands. Many people are scarcely aware of their existence, yet throughout the 24 hours of the day the coastal operators are continuously sending and receiving messages to and from vessels within a radius of thousands of miles.

The coastal operator not only communicates with ships at sea, but he acts the part of a traffic director. Sometimes several ships are trying to "talk" to him at the same time, and it is his prerogative to tell one to proceed with his message, another to call him again in half-an-hour, and another to stand-by until he is called. The most important function of the coastal operator, however, is to listen for distress signals. He is eternally on the watch for the S.O.S., and the moment that call is heard he sends out in eight letters a call, which is an order to all stations to cease transmitting and listen.

It is the coastal operator who determines which vessel can most readily render assistance, and thus he reports to the navigation authorities. Recently, when the Tahiti sank in mid-ocean, the operators of Suva radio had complete command of shipping in the Pacific. Through their agency the messages from the sinking vessel were not only communicated regularly to the rescuing craft and other shipping, but the Tahiti's owners in New Zealand were kept in constant touch.

Many improvements have been made in the coastal radio stations since 1922. In that year the A.W.A. company took them over from the Postal Department, which was never adequately organised for a radio service. The old spark transmitters were then in use, and an extensive research was immediately commenced with a view to developing an efficient valve transmitter with which to replace them. The experiments were successful, and now the most modern of transmitters are installed throughout the coastal stations.

In order to ensure a trouble-free service, each station is also equipped with an auxiliary universal wave transmitter. This is a low-powered instrument, which can be operated on any wavelength as simply as a radio receiver is tuned in to various broadcasting stations. Although these sets use no

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might try four yards of 18 gauge nicrome wire in series with your lowest tap.

MUSHY (Nelson): When listening to 2YA reception is mushy, more so than any other station.

A.: This may be due to your locality, as your set would hardly distort on one station.

K. A.D. (Hawke's Bay): Could you give me the address of "Crystal and One Valve, Auckland"?

A.: We cannot make addresses public without the wish of the person concerned, but if "Crystal and Valve" cares to send his address to us we shall forward it on to you.